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10/696,361

10/30/2003

Yoshisada Nakamura

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12/14/2005

SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

LEE, SUSAN SHUK YIN

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

28

## Office Action Summary

Application No.

10/696,361

Applicant(s)

NAKAMURA ET AL.

Examiner

Susan S. Lee

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2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 6,18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Upon reconsideration of the claims, the previous allowability of claims 4 and 16 that are now incorporated in claims 1 and 14, respectively, claims 9 and 10 is hereby withdrawn in view of the prior art to Otsuka et al. (6,094,559), Imai et al. (2002/0190060), Takagi et al. (6097926), and Kanesawa et al. (6,795,661).

### ***Claim Objections***

Claim 10 is objected to because of the following informalities:

As to claim 10, line 3, "the portion" should be - - a portion - - .

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al. (6,097,926) in view of Miyabayashi et al. (5,138,390) as shown by Kanesawa et al. (6,795,661).

Takagi et al. discloses a fixing device (heating and pressuring means shown in Fig. 65A - 388, 313) that fixes toner images on paper of sizes not limited to A4 vertical size and a post card size. Note column 28, lines 33-40. The fixing device has about a diameter of 50 mm (note column 35, lines 27-33. Thus, the fixing roller 388 has an

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outer diameter of 50 mm. This reveals that the perimeter of the fixing roller 388 is equal to  $\pi \times \text{diameter}$ , that is  $\pi \times 50 \text{ mm}$  or  $3.14 \times 50 \text{ mm} = 157 \text{ mm}$  or  $15.7 \text{ cm}$ .

Takagi et al. differs from the instant invention by not disclosing a cleaning sheet used to clean the heating and pressuring means.

Miyabayashi et al. discloses using a cleaning sheet 11 used to clean the fixing roller and pressing roller of stains. The cleaning sheet 11 have a size of  $220 \text{ mm} \times 300 \text{ mm}$  or  $220 \text{ mm} \times 220 \text{ mm}$  (note column 6, lines 32-35). The sheet is also coated with ethylene-vinyl acetate copolymer that is also thermoplastic resin. Note column 3, lines 30-68 and column 4, lines 1-9.

Kanesawa et al. discloses printing postcards and photographs of the size  $89 \text{ mm} \times 127 \text{ mm}$ . The fixing belt 64 used for fixing the postcards and photographs were 130, 180, 240, and 330 mm in width. Note column 14, lines 9-15 and lines 36-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Takagi et al. with that of Miyabayashi et al. so that the fixing device can be further cleaned of stains left behind after fixing toner images. Since the diameter of Takagi is about  $15.7 \text{ cm}$ , this difference between the cleaning sheet and the circumference of the fixing roller is  $15.7 \text{ cm} - 2.2 \text{ cm} = 13.5 \text{ cm}$  which reads on claims 3 and 15. Additional, since Takagi discloses printing on post cards, Kanesawa et al. shows it is well known in the art that post cards are of the size of  $89 \text{ mm} \times 127 \text{ mm}$ . This suggestion shows that a circumference of fixing roller of Takagi et al. ( $157 \text{ mm}$ ) is longer than either a width ( $89 \text{ mm}$ ) or a length of a post card ( $127 \text{ mm}$ ).

Claims 1, 3, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al. (2002/190060) in view of Miyabayashi et al. (5,138,390) as shown by Kanesawa et al. (6,795,661).

Imai et al. discloses a fixing belt 36 with a diameter of 50 mm and comprising an endless belt base of polyimide resin and a releasing layer of one of silicone rubber, fluorocarbon rubber, PTFE, PFA, and FEP. Note page 12, paragraph [0153]. Pressing roller 2, fixing roller 37, and fixing belt 36 (note page 14, paragraph [0164]) read on the instant invention's heating and pressing means. A various types of sheets can be fixed by the fixing belt 36 such as JIS A4, A3 size, B5 size, and postcards. Note pages 1 and 2, paragraph [0010]. This reveals that the perimeter of the fixing belt is equal to  $\pi \times$  diameter, that is  $\pi \times 50 \text{ mm}$  or  $3.14 \times 50 \text{ mm} = 157 \text{ mm}$  or  $15.7 \text{ cm}$

Imai et al. differs from the instant invention by not disclosing using a cleaning sheet having a length greater than the fixing belt's perimeter and smaller than the smallest image receiving sheet.

Miyabayashi et al. discloses using a cleaning sheet 11 used to clean the fixing roller and pressing roller of stains. The cleaning sheet 11 has a size of 220 mm x 300 mm 220 mm x 220 mm (note column 6, lines 32-35). The sheet is also coated with ethylene-vinyl acetate copolymer that is also thermoplastic resin. Note column 3, lines 30-68 and column 4, lines 1-9.

Kanesawa et al. discloses printing postcards and photographs of the size 89 mm x 127 mm. The fixing belt 64 used for fixing the postcards and photographs were 130, 180, 240, and 330 mm in width. Note column 14, lines 9-15 and lines 36-38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Imai et al. with that of Miyabayashi et al. so that the fixing device can be further cleaned of stains left behind after fixing toner images. Since the diameter of Imai et al. is about 50 mm, this difference between the cleaning sheet and the perimeter of the fixing roller is  $15.7\text{ cm} - 3.0\text{ cm} = 13.5\text{ cm}$  which reads on claims 3 and 15. Additional, since Imai et al. discloses printing on post cards, Kanesawa et al. shows it is well known in the art that post cards are of the size of 89 mm x 127 mm. This suggestion shows that a perimeter of the fixing belt of Imai et al. (157 mm) is longer than either a width (89 mm) or a length of a post card (127 mm).

Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al., as modified by Miyabayashi et al. and shown by Kanesawa et al., as applied to claims 1, 3, and 11-15 above, and further in view of Chen et al. (2001/0021491).

Imai et al., as modified by Miyabayashi et al. as shown by Kanesawa et al., differ from the instant invention by not disclosing a cooling device.

Chen et al. discloses a blower 16 used to cool the fixing belt 14. Note column 6, paragraph [0052].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus and method of Imai, in view of Miyabayashi et al. as shown by Kanesawa et al., with that of Chen et al. so that the fixing belt can be cooled to prevent from overheating.

Claims 7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai et al., as modified by Miyabayashi et al. and shown by Kanesawa et al., as applied to claims 1, 3, and 11-15 above, and further in view of Otsuka et al. (6,094,559).

Imai et al., as modified by Miyabayashi et al. as shown by Kanesawa et al., differ from the instant invention by not disclosing a size of the cleaning sheet is selected from the group consisting of L-size, A6-size, A4-size, B4-size, A3-size, B5-size, postcard-size, and business card-size; a fixing temperature at which toner is fixed on an image-receiving sheet in the image forming apparatus differs from a temperature during cleaning at a portion of the image forming apparatus where fixing is conducted; and a transport speed during cleaning is different than the transport speed of toner fixing.

Otsuka et al. discloses an image forming apparatus with a cleaning mode for cleaning fixing member in which a sheet is pinched by the nip, and the sheet is conveyed in a direction by repeating rotation and stoppage of the rotatable fixing member. Note abstract. A cleaning sheet of size A4 is used. Note column 14, lines 24-25. The energization of a heating means of the fixing device is changed from ON to OFF in the cleaning mode (note column 27, lines 61-67). The rotatable fixing member is also stopped during cleaning mode, thus this reads on the instant invention's claim 10

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where the transport speed during cleaning differs from the transport speed during fixing of toner images (note column 27, lines 61-67.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Imai et al., in view of Miyabayashi et al. as shown by Kaneshawa et al., with that of Otsuka et al. so that sizes of the cleaning sheet do not differ from sizes of imaging sheets so that supply trays can be used for both cleaning sheet and imaging sheets and heating can be conserved for cleaning the fixing device to avoid overheating.

***Allowable Subject Matter***

Claims 6, 18, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

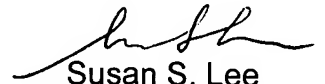
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan S. Lee whose telephone number is 571-272-2137. The examiner can normally be reached on Mon. - Fri., 10:30-8:00, Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Art Grimley can be reached on 571-272-2136 or 571-272-2800 (Ext. 52). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Susan S. Lee  
Primary Examiner  
Art Unit 2852

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